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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/771,466  | 02/05/2004  | Helmut Preisach      | Q79107              | 2962             |
| 23373   | 7590        | 10/14/2005           | EXAMINER            |                  |
| SUGHRUE MION, PLLC<br>2100 PENNSYLVANIA AVENUE, N.W.<br>SUITE 800<br>WASHINGTON, DC 20037 |             |                      | WILLIAMS, HOWARD L  |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2819                |                  |

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/771,466

Applicant(s)

PREISACH, HELMUT

Examiner

Howard L. Williams

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 2-12 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 and 15 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claim 1, drawn to a digital to analog converter, classified in class 341, subclass 141.
- II. Claims 2-12, drawn to a phase locked loop and recognition of its operation, classified in class 327, subclass 233. The inventions are distinct, each from the other because of the following reasons:

Inventions of group II and group I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the phase locked loop has a multiple path ("branch") processing arrangement and the digital-to-analog converter is not required. Additionally claims 2-5 and 7-9 in group II do not require the particulars of group I are evidence claims. The subcombination has separate utility such as reduction of glitches in any system using digital-to-analog converters.

Applicant's election without traverse of group I in the reply filed on 08 April 2005 is acknowledged. Claims 2-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 08 April 2005.

This application contains claims 2-12 drawn to an invention nonelected without traverse in the response received 08 April 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

The disclosure is objected to because of the following informalities: The description uses incongruous and non-idiomatic terminology in conjunction with figure 4. The brief description of the drawings section on page 6 describes figure 4 as a further detail of the phase control circuit of figure 2. On page 9 figure 4 is represented as

illustrating the mode of operation of the DAC as a window comparator (?). A DAC that outputs an analog signal and a window comparator that ostensibly outputs a binary signal would seem to be dissimilar elements. Appropriate correction is required.

The examiner has reviewed the response and believes the objection is proper and the disclosure needs remedy. Additionally some further explanation is in order to clarify what was thought (at least originally) to be a typographical mistake; however, the response filed 02 August 2005 demonstrates that a larger problem may exist.

The objection is not based on the use of a window comparator analogy but on the description of a digital-to-analog converter, i.e. DAC, as a window comparator. DACs output an analog value. Window comparators output a digital one. The objection is also not about the whole circuit but what terminology is used for element 22.

Figure 4 shows element 22. First, figure 2, which also includes element 22, calls element 22 an analog-to-digital converter on page 8 line 4, the opposite of a digital-to-analog converter. In fact, the replacement drawings filed with the response label element 22 A/D. The use of analog-to-digital converter seems, although a bit of a stretch, not repugnant; the same cannot be said for digital-to-analog converter.

The description sets forth an analog branch and a digital branch. Currently element 22 receives its input from the analog branch (see figure 2) so presumably has an analog input. On page 9 if element 22 were a digital-to-analog converter, then according to the description it is being driven with an analog input--it is tapped from what the description terms the analog branch-- and the counter 23 with the analog output of the digital-to-analog converter 22 as well, that is what digital-to-analog converters output. Regardless, it cannot be described both ways and similar terminology should be used throughout.

Additionally, below is a copied image with added underlining from page 7 of the priority document. The priority document seems to call element 22 an analog-to-digital converter operating as a window comparator.

Figur 4 zeigt die Wirkungsweise des Analog-Digital-Wandlers  
22, der hier als Fensterkomparator wirkt. Der Aufbau eines  
Fensterkomparators bei gegebener Kennlinie ist dem Fachmann ge-  
läufig. Die Wirkungsweise ist durch die Kennlinie gegeben. Hier  
25 wird eine "0" ausgegeben, wenn die Eingangsspannung in einem  
schmalen Bereich um den Sollwert liegt. Liegt sie darüber, wird  
eine "1" ausgegeben, darunter eine "-1".

Der als einfacher Fensterkomparator ausgeführte Analog-  
30 Digital-Wandler 22 weist bereits eine Tiefpasswirkung auf, da  
er auch starke Veränderungen nicht stärker weitergibt als  
schwache.

Im weiteren wird der Tiefpass 23, wie Figur 5 zeigt, als Zähler  
ausgeführt. Im Beispiel ist dieser Zähler durch zwei auf-

Datum: 19. Dezember 2002  
ZPL/S - Bs

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Accordingly, the needed remedy would appear to be changing page 9 lines 4 and  
10 to "analog-to-digital converter".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that  
form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public  
use or on sale in this country, more than one year prior to the date of application for patent in the United  
States.

Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by Fling et al. (US  
4591832 A). Fling et al discloses a plurality of D/A converters (16, 18; fig. 1). Their  
outputs are summed together so they can be said to form different but simultaneous  
portions, see fig. 2. The distribution circuit is seen to read upon the demultiplexer (14;  
fig. 2) which distributes the input values in an alternating fashion i.e. "in turn". If the  
input is increasing the DACs will be incremented "in turn" or if the input is decreasing  
the DACs will be decremented "in turn". The claim language is not seen to include  
anything about the size of the step.

Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 14 and 15 are allowable over the prior art of record.


Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Howard L. Williams at telephone number 571.272.1815. The Patent and Trademark Office has a new central facsimile number for application specific correspondence intended for entry, it is 571-273-8300

10/4/05  
Voice: (571) 272-1815

  
Howard L. Williams  
Primary Examiner  
Art Unit 2819